

Remarks

Reconsideration of this application is requested. By this amendment, claims 7, 16, 22, 36, and 39 have been canceled, claims 1, 3, 4, 12, 17, 18, 23, 25-28, 32, 34, 35, 37, 38, 41, and 42 have been amended, and claims 47 and 48 have been added. Accordingly, claims 1-6, 8-15, 17-21, 23-35, 37, 38, and 40-48 are in the Application.

Telephone Meeting Summary

Anthony M. Martinez and Patent Examiner Woo Choi had a telephone meeting on February 8, 2004 to discuss the rejections of Applicant's claims 4 and 23. Mr. Martinez sought clarification of the rejections for claims 4 and 23. Examiner Choi further explained the rejection of claim 23 by noting column 4, lines 7-12, of the cited document of Hamaguchi. Examiner Choi also stated that stating "in response to" in place of "when" in line 2 of claim 4 would overcome the rejection of claim 4.

Mr. Martinez thanks Examiner Choi for discussing the application during this telephone meeting.

Claims 36 and 37 Objections

The Office action objects to claims 36 and 37 stating that the dependent claims are written with incomplete sentences, each missing a verb. Claim 36 has been canceled and claim 37 has been amended to overcome this objection.

Response to 35 U.S.C. §102 Rejections

The Office action rejects claims 1-4, 11-13, 18-19, and 32-34 under 35 U.S.C. §102 (b) as being anticipated by De Martine et al. (U.S. Patent No. 5,619,675). In addition, the Office action rejects claims 1, 5, 12-14, and 32 under 35 U.S.C. §102 (b) as being anticipated by Takamoto et al. (U.S. Patent No. 5,606,706). Further, the Office action rejects claims 1, 5, 11-14, 18-20, and 32 under 35 U.S.C. §102 (b) as being anticipated by Stewart et al. (U.S. Patent Publication No. 2003/0005233). Applicant believes these rejections have been overcome in view of the amendments above and the remarks that follow.

As is well established, in order to successfully assert a prima facie case of anticipation, the Office action must provide a single prior art document that includes every element and limitation of the claim or claims being rejected. Therefore, if even one element or limitation is missing from the cited document, the Office action has not succeeded in making a prima facie case.

As is discussed in the page 9 of the Office action, the Examiner notes that De Martine does not specifically disclose that the meta data is updated during a writeback cycle. The Office action further states that Hamaguchi (U.S. Patent No. 5,386,546) discloses a method of updating the metadata during writeback cycle and refers to the rejection of claim 23.

In column 2, lines 27-35, Hamaguchi discusses a block substitution method of a cache memory comprising the steps of storing data integrity information with a main memory for each block of the cache memory, calculating a non-reference period of each block, selecting a block to be substituted based on the data

integrity information of the block and the non-reference period, and loading new information to the selected block. The integrity information is discussed in Hamaguchi as a dirty bit (D-bit) which indicates whether the integrity between the block and a corresponding block in the main memory is maintained or not (see, for example, column 3, lines 19-22, and column 3, lines 27-31, of Hamaguchi). Accordingly, Hamaguchi discusses a block substitution method for selecting a block to be substituted of a cache memory and using a dirty bit to determine which block is to be substituted (see, for example, column 4, lines 1-43). The dirty bit may be used to indicate whether or not a write back is needed. However, it is respectfully submitted that Hamaguchi does not discuss updating usage information or a usage bit during a write back and does not discuss setting a usage bit corresponding to the current clock period during a writeback cycle, the usage bit indicating usage information for the memory.

Further, Applicants submit that neither Takamoto et al. nor Stewart et al. disclose updating usage information or a usage bit during a write back and does not disclose setting a usage bit corresponding to the current clock period during a writeback cycle, the usage bit indicating usage information for the memory.

On the other hand, Applicant's claim 1 recites, among other things, setting a usage bit corresponding to the current clock period during a writeback cycle. At least this limitation of Applicant's claim 1 is not included in the cited documents of De Martine et al., Hamaguchi, Takamoto et al., or Stewart et al. Since neither De Martine et al., Hamaguchi, Takamoto et al. nor Stewart et al. teach all the

limitations of Applicant's claim 1, either alone or in combination, it is believed that the rejection of claim 1 should be withdrawn and that claim 1 is in condition for allowance.

Claims 2-4, 5, and 11 depend either directly or indirectly from claim 1 and are believed to be allowable for the same reasons as claim 1.

Applicant's claim 12 recites, among other things, wherein the memory is a destructive read cache memory and wherein the plurality of usage bits are updated during a writeback cycle. At least these limitations of Applicant's claim 12 are not included in the cited documents of De Martine et al., Hamaguchi, Takamoto et al., or Stewart et al. Since neither De Martine et al., Hamaguchi, Takamoto et al. nor Stewart et al. teach all the limitations of Applicant's claim 12, either alone or in combination, it is believed that the rejection of claim 12 should be withdrawn and that claim 12 is in condition for allowance.

Claims 13 and 14 depend from claim 12 and are believed to be allowable for the same reasons as claim 12.

Applicant's claim 18 recites, among other things, a memory controller to update the usage bits during a writeback cycle based on the clock period and to de-allocate the data using the plurality of usage bits. At least these limitations of Applicant's claim 18 are not included in the cited documents of De Martine et al., Hamaguchi, Takamoto et al., or Stewart et al. Since neither De Martine et al., Hamaguchi, Takamoto et al. nor Stewart et al. teach all the limitations of Applicant's claim 18, either alone or in combination, it is believed that the rejection of claim 18 should be withdrawn and that claim 18 is in condition for allowance.

Claims 19 and 20 depend from claim 18 and are believed to be allowable for the same reasons as claim 18.

Applicant's claim 32 recites, among other things, a second group of instructions to set a usage bit corresponding to the current clock period during a writeback cycle, the usage bit indicating usage information for the memory. At least these limitations of Applicant's claim 32 are not included in the cited documents of De Martine et al., Hamaguchi, Takamoto et al., or Stewart et al. Since neither De Martine et al., Hamaguchi, Takamoto et al. nor Stewart et al. teach all the limitations of Applicant's claim 32, either alone or in combination, it is believed that the rejection of claim 32 should be withdrawn and that claim 32 is in condition for allowance.

Claims 33 and 34 depend from claim 32 and are believed to be allowable for the same reasons as claim 32.

The Office action rejects claims 23-25, 35, 36, and 38-46 under 35 U.S.C. §102 (e) as being anticipated by Coulson (U.S. Patent No. 6,725,342). Applicant respectfully traverses this rejection in view of the remarks that follow.

Disqualification of Coulson as Prior Art

It is respectfully submitted that the cited reference of Coulson (U.S. Patent No. 6,725,342) and the invention claimed in the present Application (S/N 09/945,266) both have the same inventive entity. Specifically, both the cited reference of Coulson (U.S. Patent No. 6,725,342) and the present Application have the same sole inventor of Richard L. Coulson. Accordingly, the requirements of 35 U.S.C. § 102(e) are not met in that US Patent No. 6,725,342

is not “by another,” and therefore, US Patent No. 6,725,342 is disqualified as prior art. Thus, the rejection of claims 23-25, 35, 36, and 38-46 based on US Patent No. 6,725,342 should be withdrawn and it is believed that these claims are in condition for allowance.

The Office action rejects claims 23-26 and 28 under 35 U.S.C. §102 (b) as being anticipated by Hamaguchi (U.S. Patent No. 5,386,546). Applicant believes this rejection has been overcome in view of the amendments above and the remarks that follow.

As discussed above, Hamaguchi does not discuss updating usage information during a writeback cycle.

On the other hand, Applicant's claim 23 recites, among other things, updating the usage information during a writeback cycle. At least this feature of Applicants' claim 23 is not included in the cited document of Hamaguchi. Since the cited documents do not teach all the limitations of Applicant's claim 23, it is believed that the rejection of claim 23 should be withdrawn and that claim 23 is in condition for allowance.

Claims 24-26 and 28 depend either directly or indirectly from claim 23 and are believed to be allowable for the same reasons as claim 23.

Response to 35 U.S.C. §103 Rejections

The Office action rejects claims 5-7, 14, 15, 20, and 21 under 35 U.S.C. §103(a) as being unpatentable over De Martine et al. in view of Beardsley (U.S.

Patent No. 6,502,174). Applicant believes this rejection has been overcome in view of the amendments made above and the remarks that follow.

Claim 7 has been canceled. Claims 5 and 6 depend either directly or indirectly from claim 1 and are believed to be allowable for the same reasons as claim 1. Claims 14 and 15 depend either directly or indirectly from claim 12 and are believed to be allowable for the same reasons as claim 12. Claims 20 and 21 depend either directly or indirectly from claim 18 and are believed to be allowable for the same reasons as claim 18.

The Office action rejects claims 5, 8, 9, 14, 16, 17, 20, and 22 under 35 U.S.C. §103(a) as being unpatentable over De Martine et al. in view of Davis et al. (U.S. Patent Application Publication No. 2003/0023922). Applicant believes this rejection has been overcome in view of the amendments made above and the remarks that follow.

Claims 5, 8, and 9 depend either directly or indirectly from claim 1 and are believed to be allowable for the same reasons as claim 1. Claims 14 and 17 depend from claim 12 and are believed to be allowable for the same reasons as claim 12. Claim 16 has been canceled. Claim 20 depends from claim 18 and is believed to be allowable for the same reasons as claim 18. Claim 22 has been canceled.

The Office action rejects claim 27 under 35 U.S.C. §103(a) as being unpatentable over De Martine et al. in view of Hamaguchi. Applicant believes this rejection has been overcome in view of the amendments made above and the remarks that follow.

Claim 27 depends indirectly from claim 23 and is believed to be allowable for the same reasons as claim 23.

The Office action rejects claims 10 and 29-31 under 35 U.S.C. §103(a) as being unpatentable over De Martine and Hamaguchi in view of Davis. Applicant believes this rejection has been overcome in view of the amendments made above and the remarks that follow.

Claim 10 depends indirectly from claim 1 and is believed to be allowable for the same reasons as claim 1. Claims 29-31 depend indirectly from claim 23 and are believed to be allowable for the same reasons as claim 23.

New Claims

As indicated above, claims 47 and 48 have been added and are believed to be allowable. Applicants submit that no new matter has been added.

Claims 47 and 48 depend from claim 42 and are believed to be allowable for the same reasons as claim 42.

PATENT APPLICATION
042390.P11446Conclusion

In view of all of the above, it is believed that Applicant's claims are allowable, and the case is in condition for allowance, which action is earnestly solicited. Reconsideration of the rejections and objections is respectfully requested.

Should it be determined that an additional fee is due under 37 CFR §§1.16 or 1.17, or any excess fee has been received, please charge that fee or credit the amount of overcharge to deposit account #02-2666.

If the Examiner believes that there are any informalities that can be corrected by an Examiner's amendment, a telephone call to the undersigned at (480) 715-0624 is respectfully solicited.

Respectfully submitted,
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